WPS4567

POLICY RESEARCH WORKING PAPER 4567

The Dynamics of Ownership of Durable Goods in Bulgaria:

From Economic Crisis to EU Membership

Oleksiy Ivaschenko
Lire Ersado

The World Bank
Europe and Central Asia Region
Human Development Sector
March 2008

Policy Research Working Paper 4567

Abstract

The paper uses repeated cross-sections of Bulgaria's household survey data (1995, 1997, 2001, and 2003) and a comparable list of durable goods to investigate the dynamics and distribution of durable goods over time, including during the economic crisis of 1996-1997 and the subsequent period of relatively robust economic growth leading up to European Union membership. It examines the dynamics of the ownership of durable goods by wealth classes, geographic locations, and various ethnic groups, including the Roma. In the aggregate, there was convergence between the poorest and the richest classes in the ownership of durable goods between 1995 and 2003, with the poorest class making a significant gain between 2001 and 2003 after having lost some ground between 1995 and 2001. There was also convergence in the ownership of durable goods between urban and rural residents. However, there appear to be some diverging tendencies between Bulgarians and the minority ethnic groups, particularly in the ownership of relatively more expensive goods such as personal computers and cars.

This paper—a product of the Human Development Sector, Europe and Central Asia Region—is part of a larger effort in the department to enhance growth and reduce poverty. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at lersado@worldbank.org.

The Dynamics of Ownership of Durable Goods in Bulgaria: From Economic Crisis to EU Membership

Oleksiy Ivaschenko and Lire Ersado[1]

[1] Oleksiy Ivaschenko, Economist, ECSHD, oivaschenko@worldbank.org; and Lire Ersado, Economist, ECSHD, lersado@worldbank.org. The authors are very grateful for the comments received on the previous version of this paper from Arup Banerji, Hermann Von Gersdorff, Rebekka Grun, Anna Gueorguieva, Michael Lokshin, and Victor Sulla. The views presented in this paper are those of the authors, and should not be attributed to the World Bank Group.

1. INTRODUCTION

Now a full-fledged European Union (EU) member country, as of January 1, 2007, Bulgaria has come a long way from its difficult early years of transition to a market economy, including the decline in real GDP by 28 percent between 1990 and 1995. A severe economic crisis in 1996-1997 resulted in a further decline of 15 percent in real GDP just in a single year, during which inflation reached triple digits (**Figure 1**). However, since 1998 Bulgaria has made impressive progress toward long-term stability and sustained economic growth. In the run-up to EU membership, the Bulgarian economy and institutions had gone through major positive transformations. The period from 1998 to 2006 has been characterized by fiscal discipline and implementation of major structural reforms. As a result of these sound macroeconomic policies and deep structural reforms, Bulgaria has maintained an average GDP growth rate of close to 5 percent during the period, and inflation has been contained at around 6 percent annually (**Figure 1**).

Increased growth and low inflation have contributed to increased per capita income and consumption, which resulted in improved standard of living at the national level. Despite the strong economic growth track-record over the last decade, Bulgaria still remains one of the poorest among the new member countries of the EU. The living standard in Bulgaria is significantly lower than in most other EU member countries and for those in the lower end of the income ladder and for some ethnic minorities, still remains at subsistence level. The country's income per capita, at PPS in 2005, was 32 and 56 percent of the average level of EU25 and EU8, respectively.

Owing to the improved growth record since 1998, there is a general consensus that poverty in Bulgaria is on the decline.[2] However, welfare comparisons over an extended period of time, such as between the period of economic volatility of 1996-97 and relative prosperity of the period leading up to the EU membership in January 2007, have been impeded due to lack of reliable and comparable measures of welfare over time. For Bulgaria, the most relevant data come from the household surveys that were undertaken in 1995, 1997, 2001, and 2003.[3] However, income and consumption aggregates derived from these surveys are not comparable over time and thus do not allow assessing the household welfare dynamics. As a result, it is not entirely clear whether the living conditions of Bulgarians have improved, deteriorated or stayed the same between the mid-1990s and 2000s. This study argues that the analysis of the stock of durable goods owned by individuals and households can provide a useful and more reliable alternative approach to examining the trends in poverty and inequality in Bulgaria during this period.

There are several advantages to relying on durable goods, as opposed to or in addition to income and consumption aggregates, to analyze individual and household welfare dynamics over time. Some of the data and measurement advantages of stock variables such as durable goods are obvious. Unlike income or consumption aggregates, the ownership status of durable goods is less subject to measurement errors as they can be readily observed and verified. In household survey instruments, questions related to durable goods are straightforward and less affected by respondents' recollection ability. Furthermore, as questions on durable goods tend to be near identical from survey to survey, comparability over time is reasonably ensured.

The other advantages of relying on durable goods are related to the welfare of individuals and households owning them. The stock of durable goods that households and individuals control largely determines their structural position in society and their likelihood of avoiding or escaping persistent poverty and vulnerability (Lastrapes and Potts, 2005). Some durable goods can be inputs to generate income and offer the collateral base for consumption expenditures and productive investments. Accumulation and increased ownership of durable goods may also be

[2] See, for example, *Bulgaria: The Road to Successful EU Integration—The Policy Agenda*, The World Bank, Washington DC, November, 2005

[3] A new and similar multi-topic household survey, a joint effort between the Open Society Institute—Sofia and the World Bank's Bulgaria Poverty Monitoring team, is currently underway.

important indicators of the improvement in the overall welfare as individuals and households tend to engage in purchase of more durable goods and other long-terms assets than basic consumption commodities as they and their national economy become more prosperous. Thus, understanding the dynamics of ownership of durable goods is useful and possibly more reliable alternative to consumption and income measures when it comes to understanding structural poverty and longer-term socio-economic dynamics.[4]

In Bulgaria, much like elsewhere, less emphasis has been paid to the understanding of individual and household welfare dynamics associated with the accumulation of durable goods. For example, we have no answer to the following questions: What happened to the distribution of durable goods over time? Who in the asset space benefited the most from the enhanced economic growth of the late 1990s and early 2000s and by how much? What is the trend in ownership of durable goods among various socio-economic groups?

This paper uses the repeated cross-sections of Bulgaria's household survey data (1995, 1997, 2001, and 2003) and a comparable list of durable goods to investigate the dynamics and the distribution of durables over time, including the period of the 1996-1997 economic crises and the subsequent period of relatively robust economic growth leading up to 2003. It examines the dynamics of the ownership of durable goods by wealth classes, geographic locations, and various ethnic groups, including the Roma. We examine how measures of material deprivation (durable goods ownerships) move as the economy grows and incomes rise. For instance, we look at the share of low- income families owning durable goods such as a car, washing machine, color TV, or computer over time and across socio-economic groups. Understanding how these measures of material deprivation move is important to draw inferences about the well-being of the poor as this will depend in part on whether households with low incomes nevertheless possess similar material goods, or whether they are lacking items possessed by more affluent households.

The paper uses a straightforward, yet very reliable approach to investigating the changes in the distribution of ownership of durable goods over time. We look at the trends in the possession of

[4] The literature on the poverty dynamics increasingly recognizes the importance of adopting an asset-based approach to the study of the changes in well-being to better distinguish the deep-rooted, persistent structural poverty from the transitory one (see Carter and Barrett, 2006, and the literature reviewed there).

key durable goods over time,[5] analyze the convergence/divergence patterns across various categories of households (poor versus middle class versus rich), and measure the importance of the "growth" vs. "convergence" components of changes in per capita consumption to explain the observed variation in the quantities of durable goods. Analyzing the quantities of selected durable goods over time provides advantage over using the asset index which lumps together various asset items. It also provides a clear advantage over trying to analyze the value of assets over time,[6] which is prone to comparability problems caused by such factors as: (i) the prices (values) of many *new* hi-tech goods tend to decline over time - for example, the price (value) of the new personal computer today is much lower than of the comparable model a few years ago; (ii) households are likely to over or under-estimate the (resale) values of durable goods, particularly during the period of hyperinflation (which was the case in Bulgaria in 1996-97).

The scope of this paper is limited to the analysis of the changes in the distribution of assets as captured by durable goods. In other words, in this paper we do not analyze "productive" assets such as land or livestock. While examining the distribution of productive assets is important, there are many reasons for why we just look at the durable goods in this study: (1) 70 percent of Bulgarian households reside in urban areas, where the possession of the "productive" assets is very limited; (2) irrespective of the place of residence, one would expect that improved living conditions (as captured by income or consumption) would result in increased acquisition of durable goods, so focusing on this group of goods should satisfy the purpose of the analysis; (3) the changes in the "productive" assets such as land could be driven by exogenous (growth) policy reforms, such as land restitution reform that took place in Bulgaria; since in the empirical part of the paper we want to decompose the changes in assets into "growth" vs. "convergence" components, inclusion of the "productive" assets may bias the results; (4) the changes in the "productive" assets such as livestock could be subject to fluctuations driven by adverse weather conditions, etc.

[5] We of course use the list of durable goods comparable over time.

[6] Looking at the correlation (the Pearson correlation coefficient) between the estimated (resale) value of durables and household per capita consumption in various years, we find it to be statistically significant (at the 1% level) and of the magnitude of about 35-40%. Moreover, there is a statistically significant (at the 1% level) increase in this correlation from about 35% in 1995 to 40% in 2001/2003. We also find that the correlation between the resale value of durables and per capita consumption is highest for the poorest and richest classes.

The rest of the paper is structured as follows. Section 2 looks at the dynamics in the distribution of ownership of durable goods over time and across wealth classes. Section 3 analyzes whether the quantity of durable goods across wealth classes converged or diverged during 1995-2003. Section 4 investigates the differences in the quantity of durable goods across ethnic groups and regions (capital city/other urban/rural areas) in Bulgaria, and analyzes the respective convergence/divergence patterns. Section 5 develops the model which allows one to decompose the observed changes in the quantity of assets over time into the impacts of the "growth" vs. "convergence" components of changes in consumption. Section 6 presents the empirical results. Section 7 concludes by highlighting the main findings of the paper.

2. TRENDS OVER TIME AND ACROSS WEALTH CLASSES

We first analyze the trends in the stock of durable goods owned by Bulgarian households by looking at the major durable goods comparable across surveys (1995, 1997, 2001, and 2003). The variable of interest is the average (across all households in the survey) quantity of a given durable good per household. The rationale for preferring this variable to a simple indicator whether a household has at least one asset of certain type is that many households possess more than one given durable good, and that rising prosperity may translate into ownership of more than one of the same durable good. For instance, a household whose income increased appreciably may purchase an extra TV set while still keeping the existing old one.

The analysis of the trends in average quantities per household of major assets over time (Table 1) suggest that durable goods can be divided into three broad categories: (i) "modernization" goods that registered a statistically significant increase over time, such as a freezer, an automatic washing machine, a dishwasher, a color TV, a satellite antenna, a personal computer, and a car; [7] (ii) "obsolete" goods that show a tendency to get out of use over time, such as a manual/electric

[7] For cars the statistically significant increase only happened between 2001 and 2003. The average per household quantity of cars in 2001 was not significantly different from that in 1995.

sewing machine, a video recorder, and a radio; the average quantities of these goods clearly declined during the period of the analysis; (iii) "standard" goods whose quantities do not indicate significant changes over time, such as a gas stove, a refrigerator,[8] and a stereo system.[9]

To further analyze the changes in welfare (measured by durable goods) over time and to see how the rich fared against the middle class and the poor in the process of accumulating durable goods, this paper focuses mostly on the "modernization" goods. Obviously, all types of households (rich and poor) are likely to acquire these goods over time. However, they will do so not necessarily at the same pace – for example, rich households may accumulate assets at a faster rate than poor households.[10] Among the "modernization" goods for the purpose of our analysis we pick a few that are generally widespread among the population. Durable goods, which are less widely used among the population, such as dishwashers[11] are not the subject of further investigation. As a result, four durable goods -an automatic washing machine, a color TV, a personal computer[12] and a car - are selected for further analysis of the ownership trends over time and across socio-economic groups.

The main purpose of our analysis is to investigate how various "slices" of the population, or population groups, fared in the accumulation of durable goods over time. To do that, we define 5 wealth groups of population based on the distribution of household consumption per capita: (1) poorest (bottom 20 percent of the distribution); (2) lower middle (21 to 40 percent of the distribution); (3) middle (41 to 60 percent of the distribution); (4) upper middle (61 to 80 percent of the distribution); (5) richest (top 20 percent of the distribution).[13]

[8]The quantity of refrigerators seem to slightly decline over time (as the quantity of freezers clearly increased), however, the average quantity of refrigerators per household (0.93) in 2003 is only marginally lower than that (0.95) in 1995 .

[9] This classification of goods does not assume any value judgment, but is rather based on the observed trends in quantity over time.

[10] One could also expect that richer households would get rid of the "obsolete" goods at a faster rate. We do not investigate this issue in the paper.

[11] By 2003 there were only 1.5 dishwashers on average, per 100 households.

[12] Only a very few households had personal computers as of 1995. Nevertheless, since then there was a substantial increase in the possession of this item and by 2003 there were 10 computers on average per 100 households.

[13] The consumption aggregate for Bulgaria was calculated in all survey years (1995, 1997, 2001 and 2003) and does not include the user value of durables. While the real value of consumption aggregate is not comparable over time, we, however, anticipate that the rankings of households are comparable over time given the composition of the consumption aggregate. This assumption is supported by the existent evidence from Bulgaria household surveys (see, for example, Carlo Del Ninno, 1996; Tesliuc, 2004),

The trends in the average quantity per household of selected durable goods across wealth groups in 1995, 2001 and 2003 are presented in Figure 2.[14] What do we learn from this graph? First, between 1995 and 2003 there was a statistically significant increase in the stock of selected durable goods across all wealth classes.[15] For instance, the average number of color TVs (CTVs) per household increased from 1 to 1.24 percent for the richest households, from 0.72 to 1.04 percent for the middle class households, and from 0.52 to 0.82 percent for the poorest households. In other words, the middle class in 2003 had the same average number of CTVs as the richest class in 1995, and the poorest class in 2003 had more CTVs than the middle class in 1995 (Panel B, Figure 2).[16]

Second, the *rate* of accumulation of durable goods across wealth classes appears to be very much asset-specific. The increase in the absolute number of CTVs among the poorest has been higher in both absolute and relative terms compared to the increase among the richest, as the numbers above suggest. That would be expected given that CTV is a largely affordable good, and that rich households would not buy more and more CTVs as their wealth continue to grow, but would rather invest in other profitable assets such as real estate. At the same time, between 1995 and 2003 the average number of personal computers (PCs) per household increased from 0.04 to 0.27 percent for the richest households, from 0.01 to 0.07 percent for the middle class households, and from 0.002 (2 computes per 1000 households) to 0.01 (10 computers per 1000 households) for the poorest households. In other words, the data suggest that goods such as PCs are increasingly affordable for the richest, with the upper middle class catching up, but continuing to be out of rich for many poor households.

Third, there appears to be substantial heterogeneity across wealth classes in the rates of asset accumulation between the two periods of 1995-2001 and 2001 -2003. For instance, the increases in the acquisition of the automatic washing machines (AWMs) and CTVs were driven mostly by the middle and upper middle class between 1995 and 2001. Between 2001 and 2003, however,

[14] We do not put the 1997 data on the graph since 1997 values are very close to the 1995 ones.
[15] The means and 95% confidence intervals across wealth classes for each year are presented in Figure11 (Annex).
[16] Conditional on having a certain asset, the richest class also seems to have on average newer appliances compared to the middle and poorest class (Figure 14, Annex).

the increase in the ownership rates of these items appeared to be driven by the poorest and lower middle class (Panels A and B, Figure 2), which is consistent with a reported substantial reduction in (consumption-based) poverty during this period, especially among the rural population (Tesliuc, 2004). The acquisition of the PCs by the upper middle and the richest class also took place mostly during the 2001-2003 period (Panel C, Figure 2), as these groups may have benefited more from the enhanced economic growth observed since 2000. On the other hand, the stock of cars has slightly fallen for the poorest and lower middle class between 1995 and 2001 (but rebounded thereafter),[17] while it increased steadily throughout the years among the upper middle and the richest class (Panel D, Figure 2).

3. CONVERGENCE ACROSS WEALTH CLASSES OVER TIME

Different wealth classes are likely to accumulate assets at varying rates over time, as the data presented above indicate (Figure 2). It is thus interesting to investigate if the degree of inequality in assets distribution among wealth classes has increased or decreased in Bulgaria between 1995 and 2003. We explore this issue by looking at whether the wealth class means (average stocks of various durable goods) converged to or diverged from the overall (national) mean over time.

The convergence/divergence trends can be easily seen by looking at Figure 3. The figure shows the ratio of the average quantity per household of a given durable good in a wealth class to the overall (across all wealth classes) average quantity of the same good in a given year. The divergence or convergence can be measured by the distance of these ratios from the mean. For instance, looking at AWMs (Panel A, Figure 3) we find that in 1995 this distance is 0.51 for the poorest class and 1.47 for the richest class. In other words, the poorest class was at 51 percent of the overall mean, and the richest class was at 147 percent of the overall mean.

[17] This decline in car ownership has happened mostly during the 1996-1997 economic crisis. Many poor households were selling cars at that time because of the skyrocketing maintenance costs and the intention to alleviate the negative shock to everyday consumption.

What happened to these values over time? By 2001 the distances were 0.40 and 1.38 for the poorest and the richest classes, respectively. These numbers indicate that while all classes gained in terms of increased ownership of AWMs between 1995 and 2001 (Panel A, Figure 2), the poorest class gained relatively little and as a result it has fallen behind the national average. The fact that the richest class has gotten closer to the national average indicates that it was in fact the middle class that gained the most and pushed the national average up. However, between 2001 and 2003 the distances closed for the poorest class from 0.40 to 0.56 as well as the richest class from 1.38 to 1.34. In other words, the poorest class converged to the national mean (due to a significant gain during this period) and the richest class also continued to converge to the national mean. On aggregate, between 1995 and 2003 there was convergence in the mean quantity of this asset between the richest and the poorest. In fact, the data for all durable goods presented in Figure 3 indicate that there was convergence between the poorest and richest classes during the last decade.

The data presented in Figure 3 are very illustrative and provide insights into the convergence/divergence patterns by indicating the distances of wealth classes to the national mean at various points in time. However, to provide a clear picture of convergence/divergence across wealth classes over time, some aggregate measure of convergence would be more instructive. Specifically, we use the sigma-convergence index to measure the degree of convergence or divergence in the ownership of durable goods between wealth classes.[18] In this approach, we calculate the values of the standard deviation of the mean quantity of a given asset across wealth classes at various points in time, and then look at the trend. The sigma-convergence is calculated using the formula:

$$\sigma_{jt} = \left[\frac{1}{n} \sum_i (x_{jit} - \mu_{jt})^2 \right]^{1/2} \qquad (1)$$

[18] See Yemtsov (2003) and Ivaschenko (2005) for application of sigma-convergence concept respectively to mean incomes and life expectancies across Russia's regions.

where σ_{jt} is the standard deviation of asset *j* in year *t*, x_{jit} is the average quantity per household of asset *j* in wealth class *i* in year *t*, and μ_{jt} is the overall (national) average quantity per household of asset *j* in year *t*.

The calculated values of σ_{jt} are presented in Figure 4. In terms of the average quantity of AWMs the degree of dispersion among wealth classes increased between 1995 and 2001, but declined thereafter (Panel A, Figure 4). In terms of the average quantity of CTVs the degree of dispersion also increased between 1995 and 2001, but then declined to a even lower level than that in 1995 (Panel B, Figure 4). Looking at the average quantity of PCs across wealth classes we find that the degree of dispersion was consistently increasing over time (Panel C, Figure 4). This is consistent with the findings reported in the previous section that the upper middle and richest classes were the ones who mostly acquired this durable good during this period (Panel C, Figure 2).[19] Finally, when it comes to the average quantity of cars we find that the degree of dispersion increased between 1995 and 2001, but declined between 2001 and 2003 (Panel D, Figure 2). The analysis suggests that in essence the story of Bulgaria is that of rising divergence in assets distribution among wealth classes between 1995 and 2001, followed by convergence between 2001 and 2003.

4. ETHNIC AND GEOGRAPHIC DIMENSIONS

Bulgaria is composed of three main ethnic groups: Bulgarians, Turks and Roma.[20] The Turks and the Roma are ethnic minority groups that account for about 6-7 percent and 3-4 percent of the total population, respectively.[21] There is a significant disparity in the living standards between Bulgarians and the two ethnic minorities. The latter faces a higher degree of vulnerability to poverty and risk than the average population. The disparity in poverty levels

[19] Despite the declining prices of computers over time, the possession of this durable by poor households is still low as it is not a necessary item and it costs more than many other durable goods.
[20] As per the Bulgarian law ethnicity for everybody is defined based on self-declaration.
[21] The estimates of the population shares of these ethnic groups are based on the household survey data used in this paper. The ethnical structure of the population has been quite stable over the last decade, as the survey data suggest.

between Bulgarians and ethnic minorities, particularly the Roma, are considerable. In 2001, the risk of falling into poverty was nearly 11-fold in a Roma family compared to the average Bulgarian family; however, minorities have gained some ground between 2001 and 2003. The above observation is supported by several in- depth studies. For example, one of the most recent studies finds that, *ceteris paribu*s, per capita consumption of Turkish/Roma households is on average 15/40 percent respectively lower than that of Bulgarian households (Tesliuc, 2004). In this section, we examine how the three ethnic groups faired in terms of ownership of durable goods over the last decade. The questions we ask here are: What are the differences in ownership of major durable goods across various ethnic groups? Have these differences become more or less pronounced over time?

The differences across ethnic groups in the mean quantity (per household) of various durable goods at a given point in time (2001) are presented in Figure 5. The data suggest that, for example, the mean quantity of gas/electric stoves is 1.1 for Bulgarian households versus 0.75 and 0.39 for Turkish and Roma households, respectively (Panel A, Figure 5). The mean quantity of CTVs is 0.93 for Bulgarian households versus 0.71 and 0.43 for Turkish and Roma households, respectively (Panel C, Figure 5). Interestingly, Turks have significantly more satellite antennas compared to Bulgarians and Roma. This is likely because they want to watch TV programs from their homeland, Turkey. The mean quantity of cars is 0.38 for Bulgarian households versus 0.22 and 0.08 for Turkish and Roma households, respectively (Panel D, Figure 5).[22]

Have the quantities of durable goods across ethnic groups converged to or diverged from the overall (national) mean over time? The analysis of four major assets indicates that between 1995 and 2003 the Turks and Roma households were catching up with the national mean in the quantity of such goods as AWMs and CTVs (Panels A and B, Figure 6). However, when it comes to more expensive goods such as PCs and cars, ethnical minorities do not appear to exhibit significant convergence to the national average (Panels C and D, Figure 6).[23] The

[22] Interestingly, conditional on having a certain asset, Roma households tend to have newer appliances compared to Turk and Bulgarian households (Figure 15, Annex). This is explained by the fact that there are a few very rich Roma households that can be found in the far right tail of the distribution. It is worth noting that among households that have a car many have gotten one in the last 2-3 years (Figure 15, Annex).

[23] The means and 95% confidence intervals for each year across ethnic groups are presented in Figure 12 in the Annex.

convergence and divergence patterns observed in Figure 6 are confirmed when applying the concept of sigma-convergence. The sigma convergence analysis further suggests that between 1995 and 2003 ethnic minority groups have shown some tendency of convergence in one out of the four durable goods under investigation (Figure 7). While there was convergence in the ownership of CTVs, the quantities of three other durable goods indicated the divergence tendencies between ethnic minority groups and the general population during the period.

We next look at the regional differences in the distribution of assets. In Bulgaria about 15 percent of the population lives in the capital city of Sofia, 50 percent in other urban areas and the rest in rural areas. The data on the quantity of main durables indicate that while all areas witnessed growth in the possession of durables between 1995 and 2003,[24] rural areas are still lagging behind urban areas in average quantities (Figure 8). There is a gap even for such relatively affordable items as a color TV (Panel B, Figure 8). However, the analysis of the dynamics in the quantity of four major assets between 1995 and 2001 indicates convergence between rural and urban areas in all of those durables (Figure 9 and Figure 10).

5. CHANGES IN OWNERSHIP BY WEALTH: THE MODEL AND THE DATA

The analysis presented in this paper up to this point indicates there were significant changes in the average quantity of durable goods owned by different wealth and ethnic classes in Bulgaria between 1995 and 2003. During this period Bulgaria first experienced a decline in GDP of 14.5 percent between 1995 and 1997, followed by an increase in GDP of 28 percent (or by an average of 4.7 percent per annum) between 1997 and 2003, Clearly, as the economic conditions of households (measured by per capita income or consumption) improve, it is reasonable to expect that households purchase more durable goods. In this section of the paper, we explore the

[24] The means and 95% confidence intervals for each year across regions are presented in Figure 13 in the Annex.

importance of the "growth" vs. "convergence" components of the changes in per capita consumption in explaining the observed changes in the average quantity of durable goods owned across wealth classes. The "growth" component refers to the average (national) rate of growth of incomes/consumption. The "convergence" component refers to the distance of the average income/consumption of a specific wealth class from the overall (national) mean income/consumption.[25]

In order to establish a framework to empirically estimate these "growth" and "convergence" effects, assume that the following relationship holds:

$$Y_{it} = f(X_{it,} v_i) \quad (2)$$

where Y_{it} is the average quantity of durable goods owned by wealth class *i* in period *t*, X_{it} is the average income/consumption of the wealth class *i* in period *t*, and v_i is the vector of some time-invariant characteritics affecting the level of posession of durables by the wealth class *i*. Using the fact that X_{it} can be expresed as $(X_{it}/ X_t)*(X_t)$, where X_t is the mean of X_{it} over *i*, we get the following relationship:

$$Y_{it} = f((X_{it}/ X_t)*(X_t), v_i) \quad (3)$$

It is woth noting that (X_{it}/ X_t) is the distance of the wealth class *i* to the mean in period *t*, so that the change in this variable over time is what we call the "convergence" factor, and X_t is the overall (national) mean in time *t*, so that the change in this variable over time is what we call the "growth" factor. [26]

[25] To put it in simple terms, to what extent the average number of assets in a specific neighborhood changes over time would depend on: (i) how well the whole country is doing; and (ii) how well a specific neighborhood is catching up with the rest of the country.

[26] Note that rewriting X_{it} as $(X_{it}/ X_t)*(X_t)$ is also very handy when Xs are not comparable across time, but are comparable across groups (wealth classes) at a given point in time. For example, we can use the readily available measures such as real GDP index to substitute for X_t.

Because the levels of income/consumption are likely to have diminishing marginal effects on the quantity of durable goods owned, we assume a log-linear relationship between those variables. This produces the following baseline regression specification:

$$ln(Y_{it}) = \alpha + \beta_1 * ln(X_{it}/X_t) + \beta_2 * ln(X_t) + v_i + \varepsilon_{it}; \quad (4)$$

where ε_{it} is the residual with the usual properties (zero mean, uncorrelated with Xs, uncorrelated with v_i, and homoskedastic).[27]

Note that in this model (X_{it}/X_t) is the variable that changes across both time and units (wealth classes), while (X_t) is the variable that changes over time, but not across units.[28] Equation (4) can be estimated using the fixed-effects, or the "within" estimator, which amounts to performing OLS estimation of equation (4) expressed as deviations from the group means over time.[29] Given the assumed properties of the residuals, OLS is the best linear unbiased estimator (Hsiao, 1986). The fixed-effects estimator is well suited for estimating equation (4) since it allows one to focus on how changes in within-group (wealth class) consumption are related to changes in within-group average quantity of assets. In other words, the fixed-effects estimator ignores the variation across groups.

To estimate the model, we construct a four-year pseudo panel of wealth classes by calculating the mean values of the respective variables for 20 wealth viciles (from the bottom 5% to the top 5% of wealth groups) based on the distribution of household per capita consumption. For instance, the 1st (poorest) wealth class will correspond to the bottom 5 percent of the dsitribution, while the 20th (richest) class will correspond to the top 5 percent of the distribution. All data come from the Bulgaria Integrated Household Surveys (BIHS) that were carried out in 1995, 1997, 2001 and 2003. Although the surveys were relatively small (about 2500 sample households per survey), the fact that the panel was formed using only 20 wealth groups allows for sufficient number of observations (about 125 households) in each vicile group. Since we have

[27] Here we express (X_{it}/ X_t) in percents.

[28] Assuming that the rate of increase in real consumption is the same as the rate of increase in real GDP, one can use the real GDP index as (X_t).

[29] In general form the corresponding equation that is estimated is: $(y_{it}-y_i^M) = \beta_1 * (x_{it}- x_i^M) + \beta_2 * (x_t-x^M) + (\varepsilon_{it}- \varepsilon_i^M)$; *where* y_i^M is the mean of y_i over time; x_i^M is the mean of x_i over time, and x^M is the mean of x_t over time.

surveys for 4 years, the resulting panel data set consists of 80 observations. The panel is balanced with 20 observations per year.

6. EMPIRICAL RESULTS

The results of the fixed-effects estimation of the model for four types of durable goods are presented in Table 2. Before discussing the results, it is worthwhile to look at the goodness of fit of the model specification. The F statistic test indicates that the "growth" and "convergence" variables are jointly significant for all the four durable goods at conventional levels. In the first three equations the two variables are jointly significant at the one percent level and in the last equation at the 5 percent level. In all equations these variables are also significant on their own at the conventional (10 percent or better) significance levels (Table 2). Note also that the F-test does reject the null hypothesis that group-specific effects are not significant except for the first equation. [30] This implies that if the model is estimated without taking the group effects into account (i.e., if a single overall intercept is included instead of country dummies); the resulting estimated coefficients would be biased.

What do the estimated regression coefficients tell us? The coefficient on the real GDP, or "growth" variable is equal to around 1 for three types of goods, suggesting that a 1 percent increase in real GDP (at the mean of real GDP index) is generally associated with a 1 percent increase in the quantity of a given durable good ownership rate (at the mean). The coefficient of this variable is less significant, both in terms of its statistical significance and its magnitude, in the equation for cars. In this equation the coefficient suggests that a 1 percent increase in real GDP would be associated with a 0.4 increase in the number of cars (Column 4, Table 2).

[30] Note that the estimated model is a one-way model, i.e., it does not include time dummies. Estimating the two-way (with time dummies) is not possible since our "growth" variable does not change across groups, it only changes across time (years). The inability to include time effects also precludes us from purging the "growth" variable of the potential price effects (i.e., people buying more durable goods because those goods become cheaper and not because real incomes increase). However, those price effects would apply equally to all classes.

The coefficient of the ratio of the mean consumption of the group relative to the overall mean consumption, or "convergence" variable, is close to (minus) unity for three goods out of four. This estimated elasticity[31] suggests that as a given wealth group's average consumption converges to the overall average consumption by 1 percent, that group's quantity of a given durable goods ownership will increase by 1 percent. The absolute value of the coefficient of this variable is significantly higher in the equation where the dependent variable is the number of freezers (Column 1, Table 2). This suggests that the ownership of freezers converges to the mean at a faster rate than the corresponding per capita consumption of the specific group converges to the overall mean per capita consumption.

In Table 3, we report the relative importance of the "growth" vs. "convergence" components across wealth classes and over time. This is done by calibrating the estimated coefficients to the observed changes in the explanatory variables during the two time periods: (i) 1995-2001, and (ii) 2001-2003. From Table 3, it is easy to see that during 1995-2001 the "growth" component explains only 38 percent (looking at the average across four goods) of the estimated increase (due to "growth" and "convergence" components) in the quantity of selected durable goods for the poorest class.[32] The relative importance of the "growth" component is capturing the impact of a uniform growth rate of 9.4 percent (the growth rate in real GDP between 1995 and 2001). In contrast, during the period of 2001-2003 the "growth" component explains 98.5% of the total estimated increase in the quantity of durable goods. Note that real GDP increased by 9.6 percent during this period, and the results in Table 3 imply that the poor have benefited fully from the growth. The gains in the quantity of durables by the middle class were dominated by the "growth" component during 1995-2001 and by a somewhat stronger contribution of the "convergence" component during 2001-2003. It appears that the changes for the richest class are roughly equally impacted by both the "growth" and "convergence" factors in both periods.

[31] Note that the regression coefficient in the double-log specification is equal to elasticity.

[32] The impact of the "growth" component is expressed as the percentage of the impact of the "growth + convergence" component. Note that in addition to the "growth" and "convergence" components, there is also a "residual" component. The "residual" component is expected to consist of such factors as the within-group inequality.

7. CONCLUSIONS

Accumulation and increased ownership of durable goods are important indicators of the improvement in the overall welfare as individuals and households tend to engage in purchase of more durable goods and other long-term assets than basic consumption commodities as they and their national economy become more prosperous. However, very little attention in the literature has been paid to the understanding of individual and household welfare dynamics captured by the accumulation of durable goods in the transition countries of Eastern Europe and the former Soviet Union.

This paper used repeated cross-sections of Bulgaria's Household Survey data (1995, 1997, 2001 and 2003) and a comparable list of durable goods to investigate the dynamics and the distribution of durable goods over time, including during the economic crisis of 1996-1997 and the subsequent period of relatively robust economic growth leading up to 2003. It examined the dynamics of the ownership of durable goods by wealth classes, geographic locations, and various ethnic groups, including the Roma.

The analysis suggests that all wealth (as measured by consumption) classes in Bulgaria gained in respect to the quantity of major assets (durable goods) between 1995 and 2003, although the rates of improvement varied.

While the quantity of assets has been growing during that period across all wealth classes, we find evidence of the rising divergence in assets distribution among wealth classes between 1995 and 2001, followed by convergence between 2001 and 2003.

Despite some signs of recent convergence among classes in the distribution of assets, significant gaps in the level (quantity) of durables between the poor, the middle class and the rich still remain. This is especially true when it comes to such expensive goods as personal computers, which seem to become increasingly affordable to the upper middle class, but are still owned by only a very few households at the bottom of the distribution.

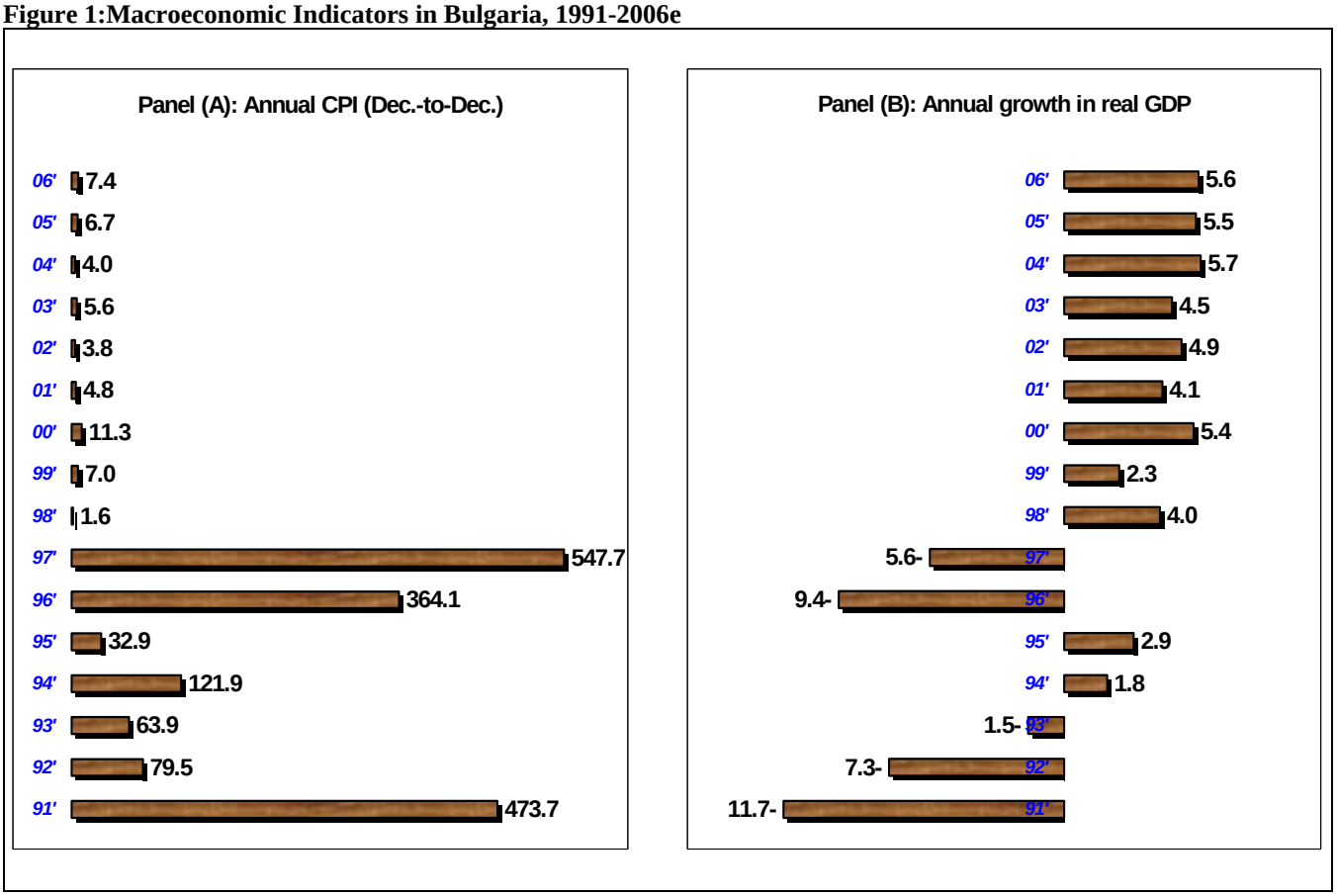
Analyzing the regional dimension of the ownership of durable goods, we find that all areas witnessed growth in the possession of durables between 1995 and 2003, and that there was convergence between urban and rural residents in the levels of ownership of durable goods. However, despite making substantial advances in the ownership of durable goods, rural residents are still lagging behind urban residents in the average quantity of durables.

Looking at the ethnical differences in the distribution of assets, we find that all groups gained in the quantity of assets during the period of 1995 to 2003. However, while ethnic groups exhibit a tendency for convergence in the quantity of such assets as color TVs (a relatively affordable item), they seem to have diverged in the quantity of less affordable items such as cars and personal computers.

The empirical analysis using the fixed effects estimation suggests that the economic growth that has taken place in Bulgaria, or the "growth" factor as we call it in the paper, contributed to the accumulation of assets by all wealth classes. However, significant gains in the quantity of assets across classes are also explained by the "convergence" factor, whereby the real consumption of various classes has been catching up with the national average. Interestingly, in explaining the gains in the quantity of assets for the poorest class the "convergence" factor was more significant during 1995 to 2001, while the "growth" factor really dominated between 2001 and 2003. The gains in assets for the middle class were driven by the "growth" factor between 1995 and 2001, with the "convergence" factor taking over during 2001 and 2003. For the richest class the contributions of these two factors are almost equal during these two periods.

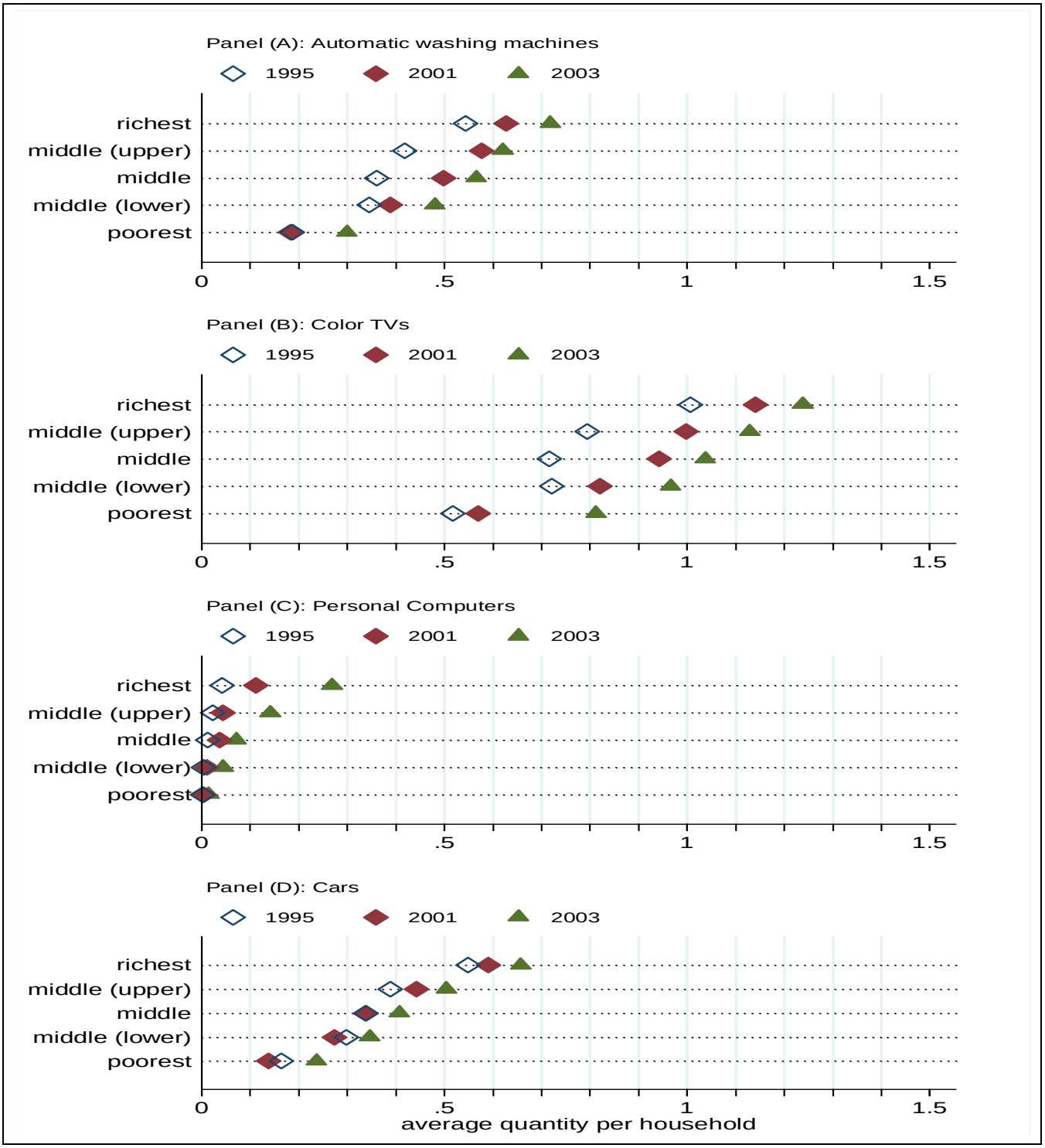
FIGURES

Figure 1:Macroeconomic Indicators in Bulgaria, 1991-2006e



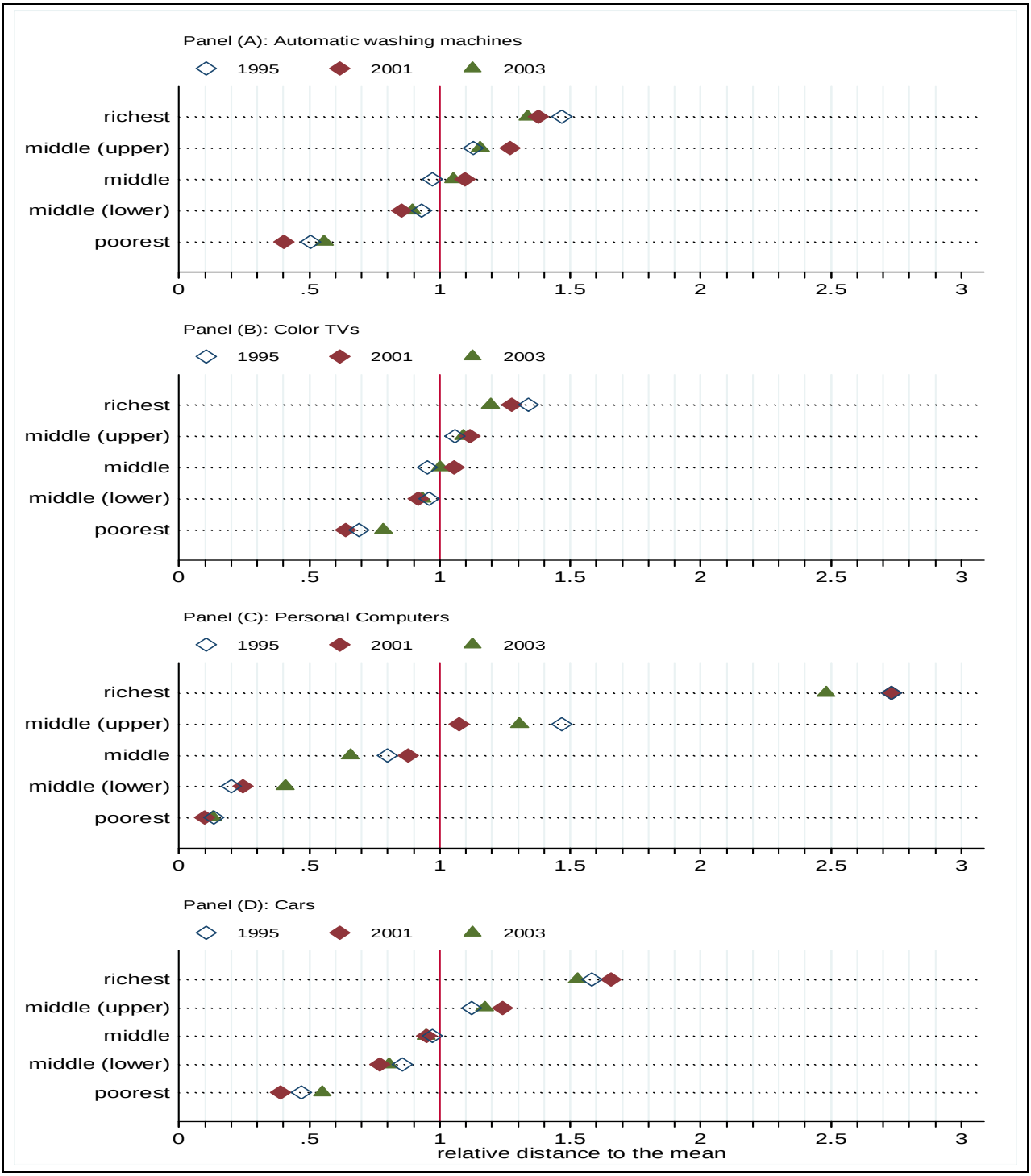
Source: Statistical Agency of Bulgaria.

Figure 2: Average Quantity per Household of Selected Durable Goods Across Wealth Groups, 1995 vs. 2001 vs. 2003



Source: Author's calculations.
Note: Wealth groups correspond to quintiles of the household per capita consumption distribution.

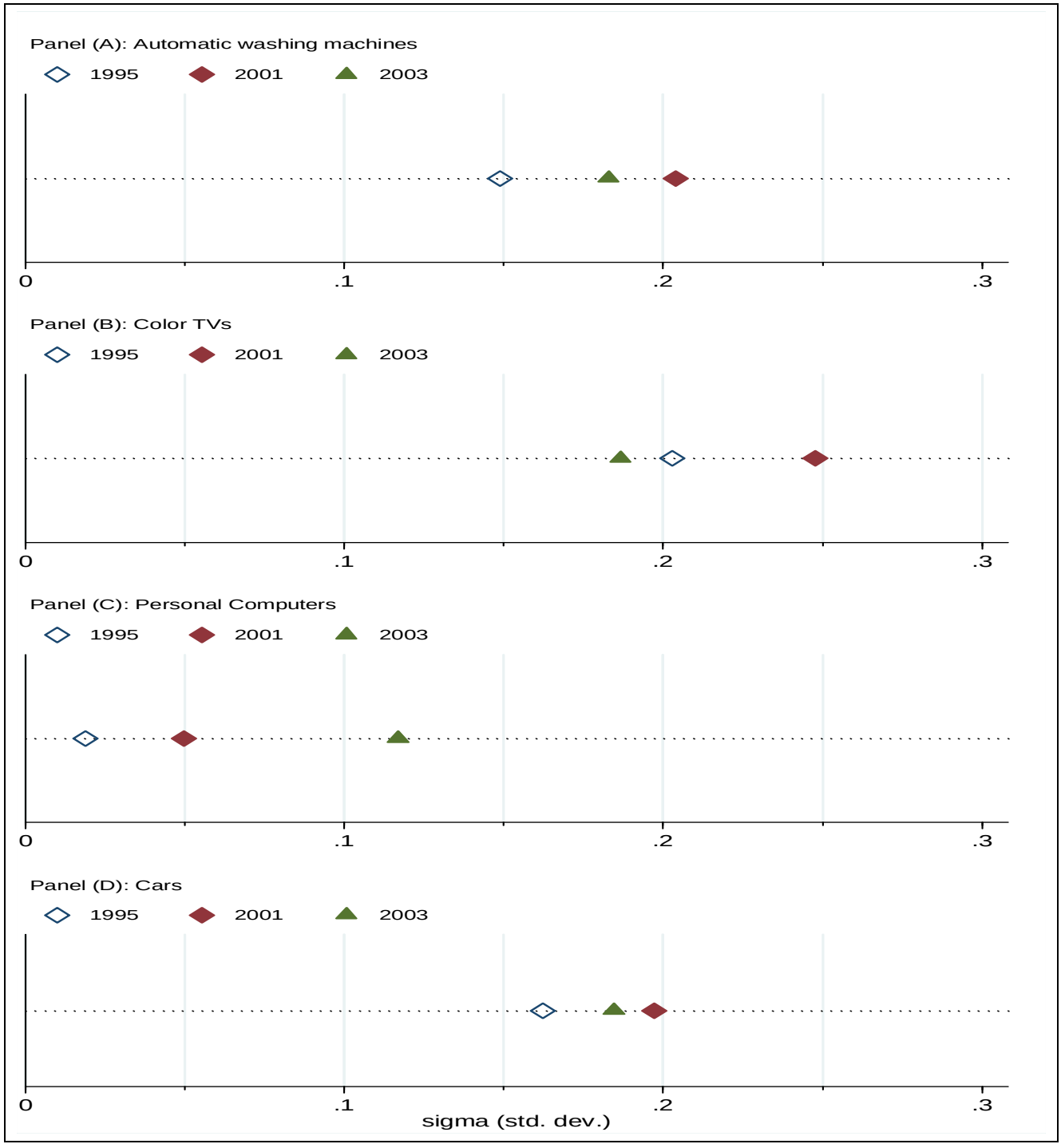
Figure 3:Distance to the Mean Quantity of Selected Durable Goods Across Wealth Groups, 1995 vs. 2001 vs. 2003



Source: author's calculations.

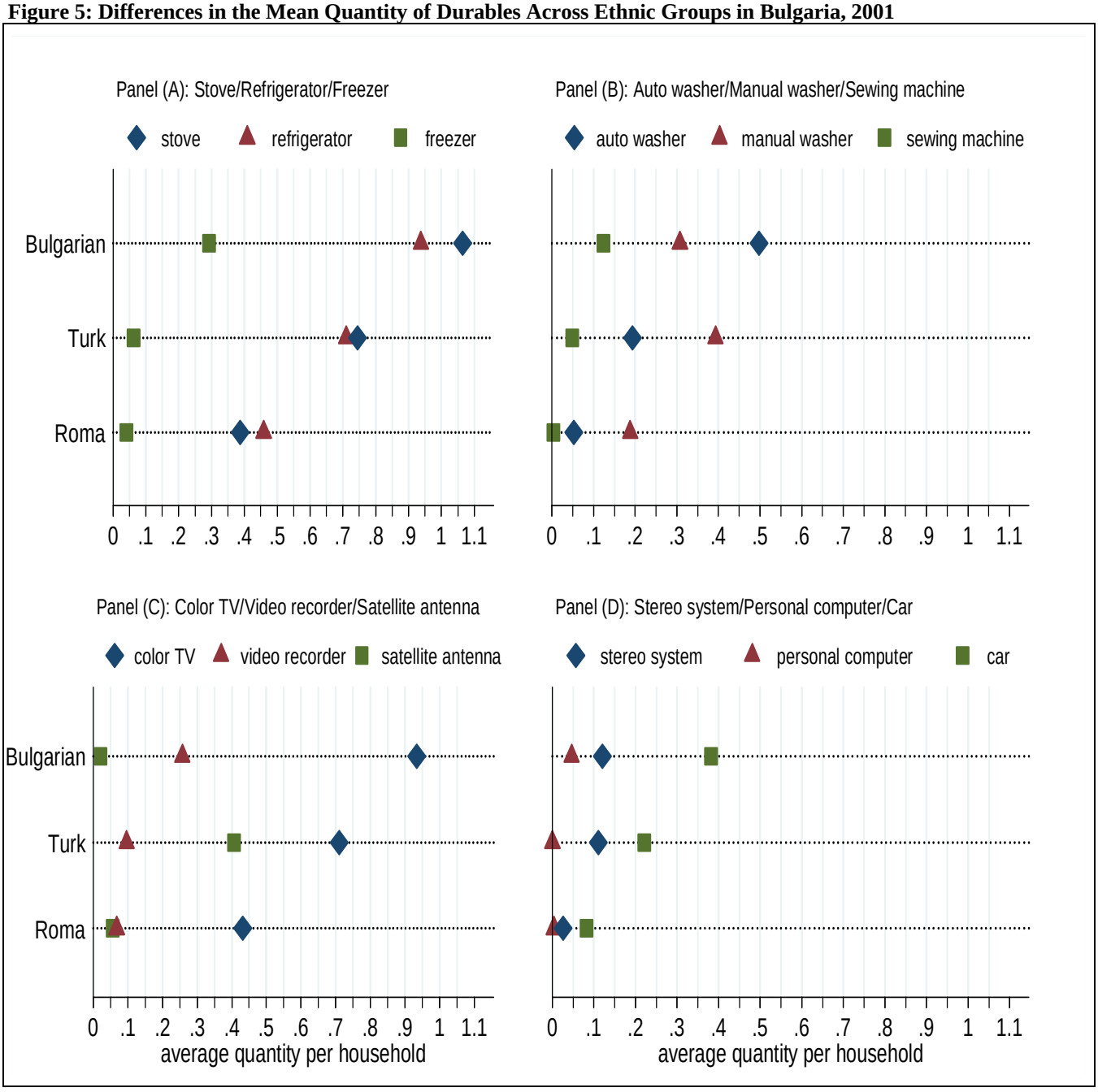
Note: wealth groups correspond to quintiles of the household per capita consumption distribution. Vertical line indicates the mean-to-mean ratio (mean/mean=1).

Figure 4:Sigma-convergence Across Wealth Groups in the Mean Quantity of Selected Durable Goods, 1995 vs. 2001 vs. 2003



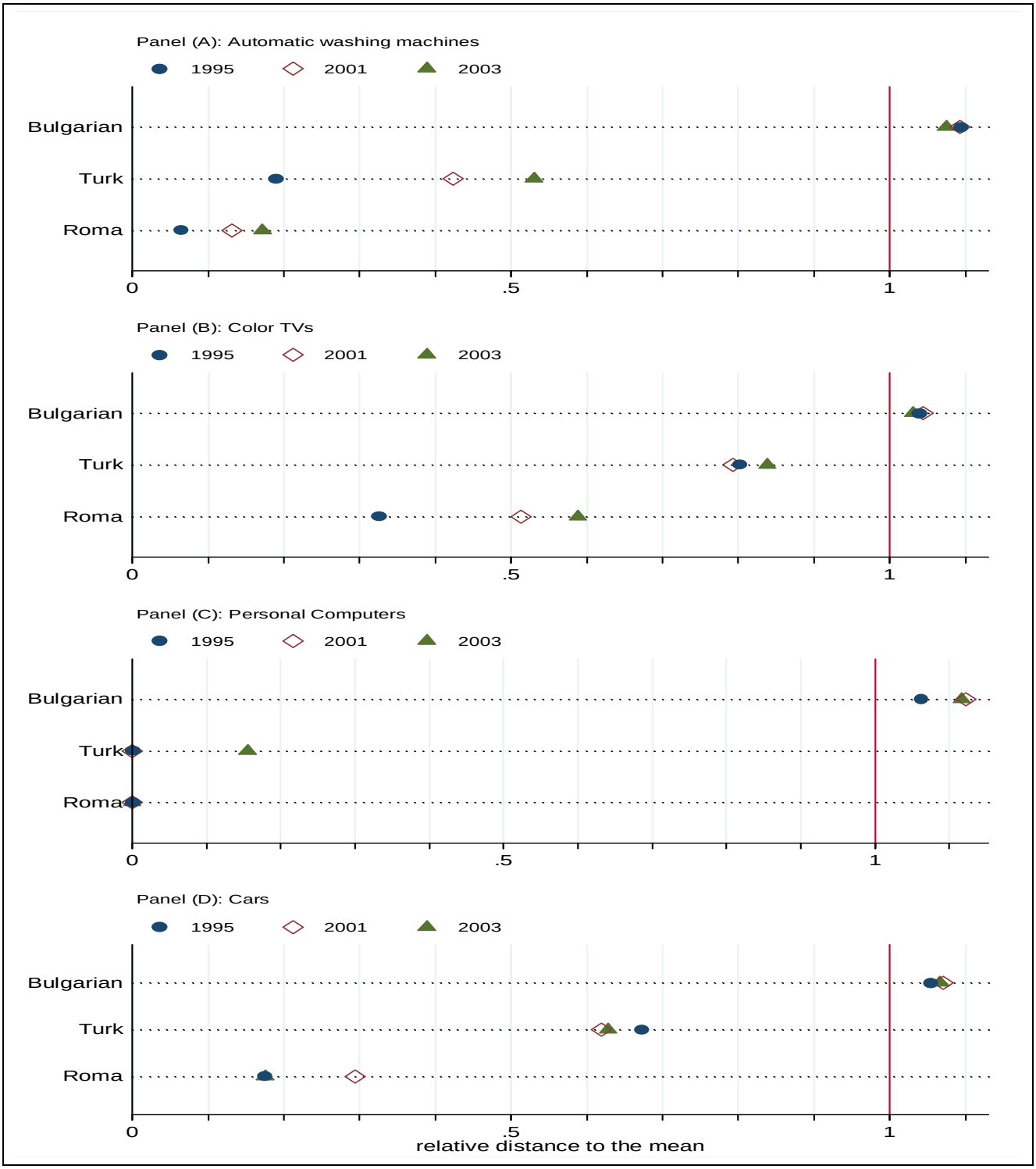
Source: Author's calculations.
Note: Sigma is the standard deviation in the mean quantity of the durable good across wealth groups.

Figure 5: Differences in the Mean Quantity of Durables Across Ethnic Groups in Bulgaria, 2001



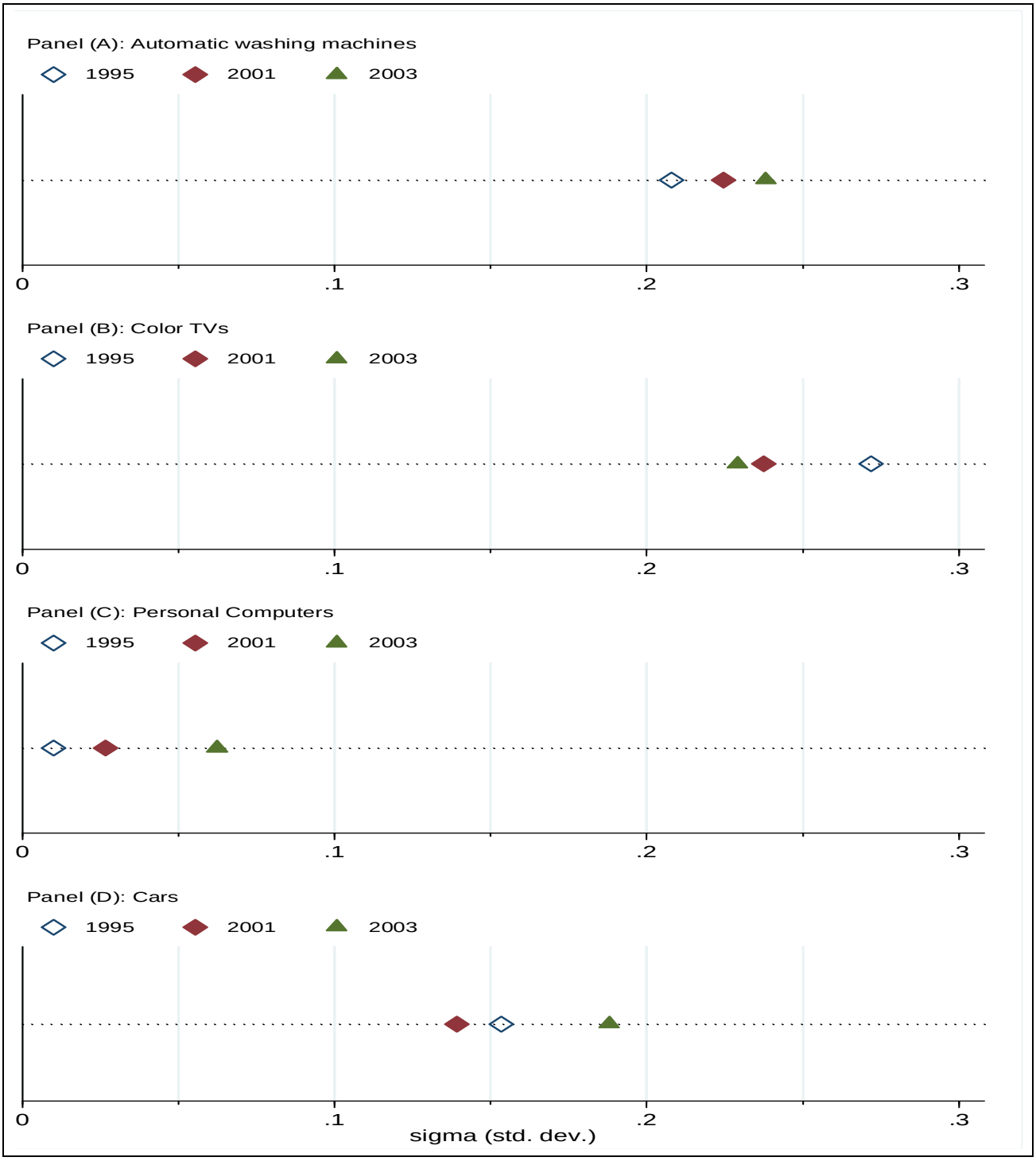
Source: Author's calculations.

Figure 6: Distance to the Mean Quantity of Selected Durable Goods Across Ethnic Groups, 1995 vs. 2001 vs. 2003



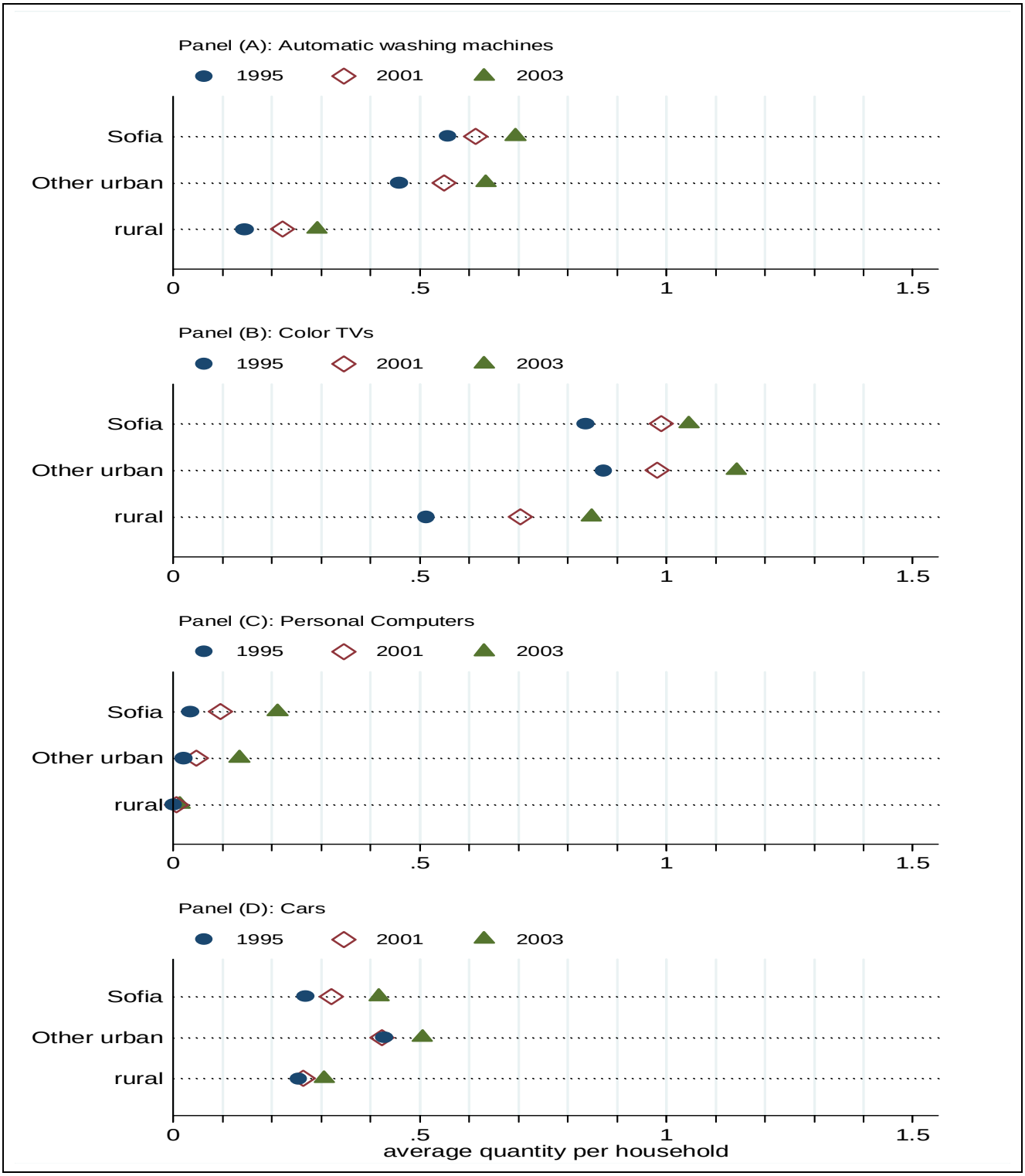
Source: Author's calculations.
Note: Vertical line indicates the mean-to-mean ratio (mean/mean=1).

Figure 7: Sigma-convergence Across Ethnic Groups in the Mean Quantity of Selected Durable Goods, 1995 vs. 2001 vs. 2003



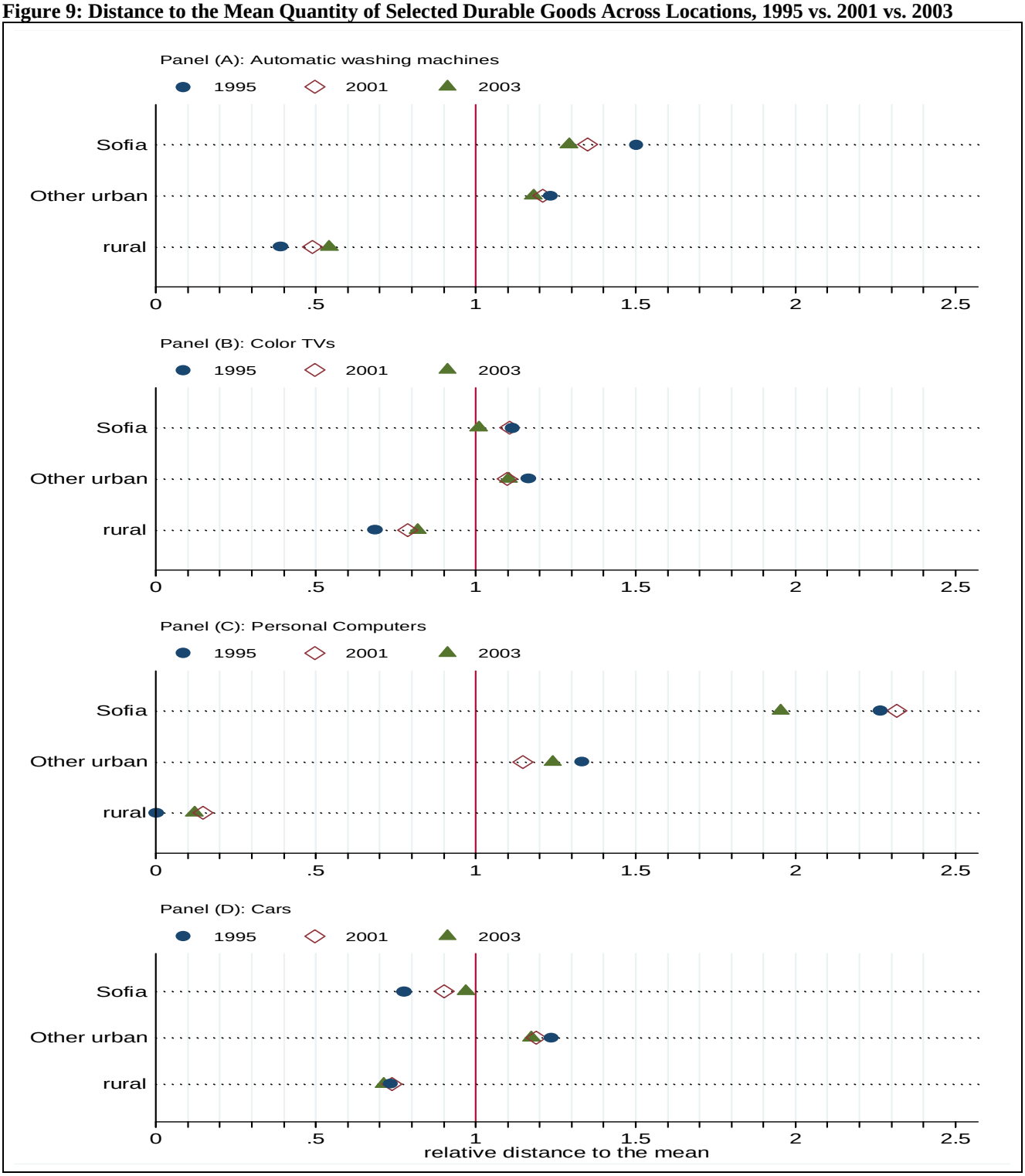
Source: Author's calculations.

Figure 8: Average Quantity per Household of Selected Durable Goods Across Locations, 1995 vs. 2001 vs. 2003



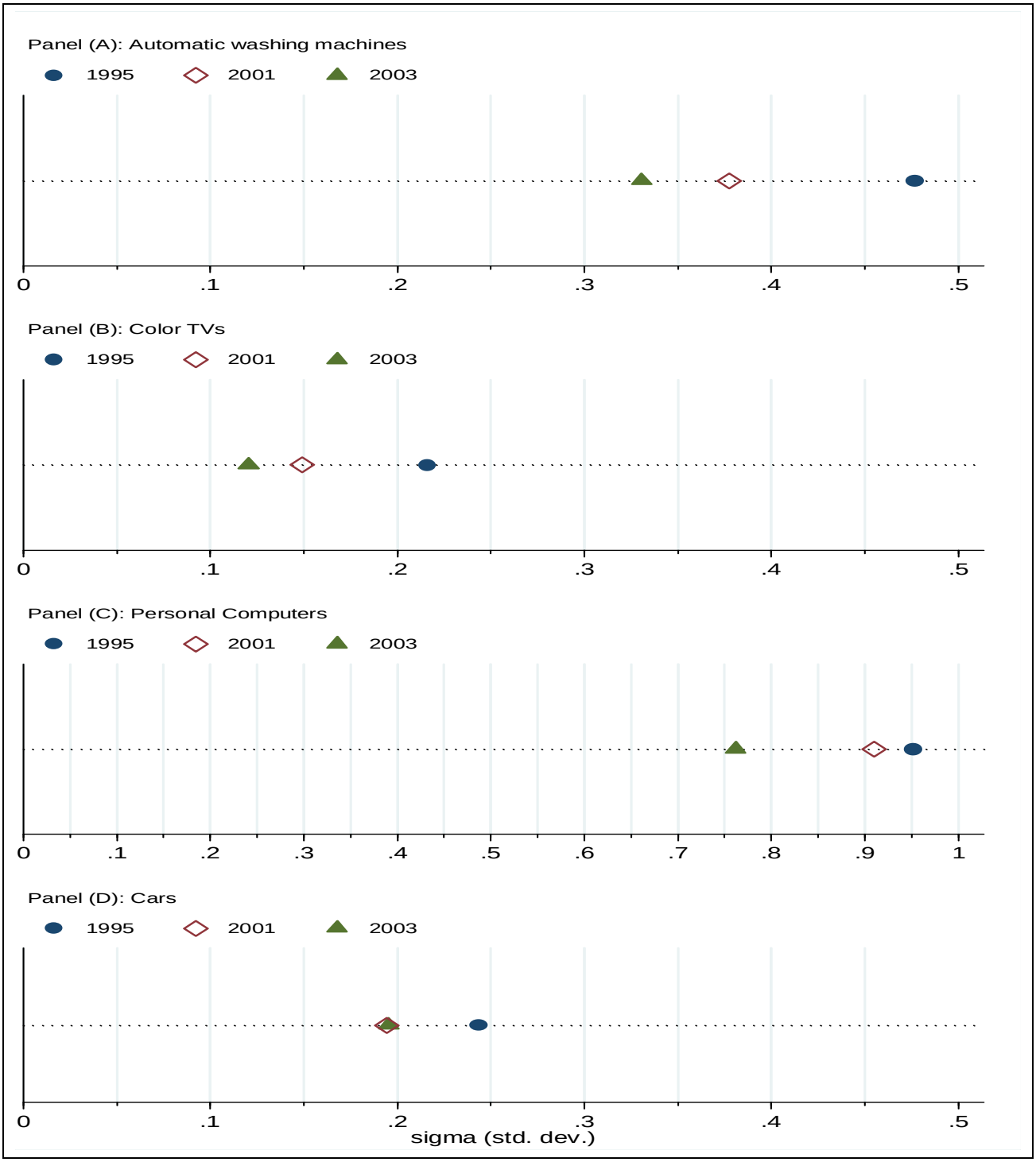
Source: Author's calculations.

Figure 9: Distance to the Mean Quantity of Selected Durable Goods Across Locations, 1995 vs. 2001 vs. 2003



Source: Author's calculations.

Figure 10: Sigma-convergence Across Locations in the Mean Quantity of Selected Durable Goods, 1995 vs. 2001 vs. 2003



Source: Author's calculations.

Tables

Table 1: Trends in the Stock of Durables Owned by Bulgarian Households
(Average number of the durable good per household)

	1995				1997	% change (to 1995)	2001	% change (to 1995)	2003	% change (to 1995)
Asset (durbale good)	mean	std. err.	95% conf.	interval	Mean		Mean		Mean	
Gas stove	0.108	0.006	0.095	0.121	0.125	*16.2*	0.125	*10.8*	n/a	
Electric stove	0.940	0.010	0.920	0.959	0.916	*-2.6*	0.882	*-9.1*	n/a	
Gas/electr. stove	1.047	0.012	1.023	1.072	1.041		1.007	*-7.0*	0.868	*-17.1*
Refrigerator	0.949	0.007	0.934	0.964	0.946		0.899	*-7.8*	0.928	*-2.2*
Freezer	0.137	0.007	0.123	0.151	0.219	*60.4*	0.264	*85.2*	0.303	*121.7*
Auto washing machine	0.370	0.010	0.350	0.389	0.402	*8.8*	0.454	*17.2*	0.523	*41.6*
Manual washing machine	0.491	0.011	0.470	0.513	0.458	*-6.9*	0.307	*-38.7*	n/a	
Dryer	0.004	0.001	0.002	0.007	0.007		0.003		n/a	
Dish washing machine	0.004	0.001	0.002	0.007	0.006		0.008	*96.5*	0.015	*274.2*
Manual sewing machine	0.360	0.010	0.341	0.380	0.372		0.295	*-22.0*	0.325	*-9.9*
Electric sewing machine	0.123	0.007	0.110	0.136	0.124		0.111	*-13.8*	n/a	
Color TV	0.750	0.012	0.727	0.772	0.786	*4.8*	0.894	*16.0*	1.030	*37.5*
VCR	0.263	0.009	0.246	0.281	0.277		0.237	*-13.1*	0.251	
Satellite antenna	0.026	0.003	0.019	0.032	0.067	*161.3*	0.049	*85.7*	0.068	*167.3*
Stereo system	0.105	0.006	0.093	0.117	0.092		0.114		0.128	*21.7*
Radio	0.664	0.011	0.642	0.686	0.638	*-4.0*	0.508	*-25.9*	n/a	
Personal computer	0.015	0.003	0.010	0.020	0.012		0.041	*156.1*	0.103	*569.7*
Car	0.346	0.010	0.326	0.366	0.367		0.356		0.421	*21.5*
Motorcycle	0.030	0.003	0.023	0.036	0.035		0.016	*-48.7*	0.025	

Source: Author's calculations.

Table 2: Regression Results from the Fixed Effects Model

Dependent variable	Ln(N of freezers per 100 HHs)	Ln(N of AWMs per 100 HHs)	Ln(N of CTVs per 100 HHs)	Ln(N of cars per 100 HHs)
Explanatory variables	Coefficient (std. err.)			
	1	2	3	4
Ln(real GDP index)	1.112 **	0.826 ***	1.023 ***	0.405 *
	0.547	*0.278*	*0.166*	*0.244*
Ln(avg.consumption of the group/avg. consumption)	-2.982 **	-1.048 *	-0.959 ***	-1.095 **
	1.211	*0.614*	*0.367*	*0.540*
Constant	11.352 **	4.726 *	4.193 **	6.628 ***
	5.674	*2.878*	*1.718*	*2.530*
N of observations	80	80	80	80
N of groups	20	20	20	20
F(2,58)	4.60	5.39	20.93	3.10
Prob > F	0.014	0.007	0.000	0.053
F (fixed effects are jointly zero)	1.34	2.87	1.80	2.77
Prob > F	0.194	0.001	0.045	0.002

Source: Author's estimates.

Table 3: Importance of the "Growth" Component in the Total ("Growth" + "Convergence") Explained Change in the Quantity of Assets, %

Wealth class	Type of asset				average
	Freezers	AWMs	CTVs	Cars	
	1995-2001				
poorest	28.0	45.1	52.7	27.8	38.4
middle (lower)	76.5	87.3	90.3	76.4	82.6
middle	65.1	79.8	84.2	64.9	73.5
middle (upper)	47.1	65.3	71.8	46.9	57.8
richest	36.3	54.7	62.0	36.1	47.3
	2001-2003				
poorest	98.0	99.0	99.3	98.0	98.6
middle (lower)	33.1	51.1	58.5	32.9	43.9
middle	32.1	49.9	57.4	31.9	42.8
middle (upper)	34.2	52.4	59.8	34.0	45.1
richest	47.8	65.9	72.3	47.5	58.4

Source: Author's estimates.

References

Carter, M. R. and Barrett, B. C. (2006). The Economics of Poverty Traps and Persistent Poverty: An Asset-Based Approach. *Journal of Development Studies*, 42 (2): 178-199.

Del Ninno, C. (1996). Poverty Profile: A Background Paper for the Bulgaria Poverty Assessment Study. The World Bank Mimeo, Washington D.C.

Filmer, D. and L. Pritchett (1998). The effect of household wealth on educational attainment around the world: Demographic and Health Survey Evidence. The World Bank Policy Research Working Paper No. 1980, 1998.

Hsiao, C. (1986). Analysis of Panel Data. Cambridge, UK: Cambridge University Press.

Ivaschenko, O. (2005). The Patterns and Determinants of Longevity in Russia's Regions: Evidence from Panel Data. *Journal of Comparative Economics*, 33: 788-813.

Lastrapes, W. D. and Todd B. Potts. (2006). Durable goods and the forward-looking theory of consumption: Estimates implied by the dynamic effects of money. *Journal of Economic Dynamics and Control*, 30: 1409-1430.

Tesliuc, C. M. (2004). Poverty Trends in Bulgaria: 2001-2003. The World Bank Mimeo, Washington D.C.

Yemtsov, R. (2003). Quo Vadis: Inequality and Poverty Dynamics Across Russian Regions in 1992-2000. WIDER Discussion No. 2003/67. UNU/WIDER, Helsinki.

The World Bank (2005). *Bulgaria: The Road to Successful EU Integration—The Policy Agenda*, The World Bank, Washington DC.

Annex 1

Figure 11: Average Quantity per Household of Selected Durable Goods Across Wealth Groups, 1995 vs. 2001 vs. 2003 (means and 95% confidence intervals)

Type of durable good	Wealth class	1995			2001			2003		
		Mean	95% confidence interval		Mean	95% confidence interval		Mean	95% confidence interval	
automatic washing machine	poorest	0.187	*0.152*	*0.222*	0.182	*0.148*	*0.216*	0.251	*0.216*	*0.286*
	middle (lower)	0.344	*0.302*	*0.387*	0.388	*0.345*	*0.431*	0.445	*0.404*	*0.485*
	middle	0.360	*0.316*	*0.403*	0.498	*0.453*	*0.543*	0.567	*0.525*	*0.609*
	middle (upper)	0.418	*0.373*	*0.462*	0.576	*0.532*	*0.620*	0.679	*0.640*	*0.718*
	richest	0.543	*0.496*	*0.589*	0.626	*0.583*	*0.669*	0.740	*0.703*	*0.778*
color TV	poorest	0.518	*0.472*	*0.564*	0.570	*0.524*	*0.616*	0.798	*0.752*	*0.844*
	middle (lower)	0.721	*0.675*	*0.767*	0.820	*0.779*	*0.861*	0.920	*0.877*	*0.964*
	middle	0.715	*0.669*	*0.761*	0.942	*0.897*	*0.987*	1.058	*1.013*	*1.102*
	middle (upper)	0.794	*0.751*	*0.838*	0.998	*0.955*	*1.041*	1.183	*1.137*	*1.230*
	richest	1.006	*0.945*	*1.067*	1.140	*1.085*	*1.195*	1.222	*1.170*	*1.275*
personal computer	poorest	0.002	*-0.002*	*0.006*	0.004	*-0.002*	*0.010*	0.014	*0.004*	*0.023*
	middle (lower)	0.000	*0.000*	*0.000*	0.010	*0.001*	*0.019*	0.036	*0.021*	*0.051*
	middle	0.012	*0.002*	*0.022*	0.036	*0.020*	*0.052*	0.071	*0.050*	*0.093*
	middle (upper)	0.022	*0.009*	*0.036*	0.044	*0.026*	*0.062*	0.138	*0.108*	*0.167*
	richest	0.041	*0.022*	*0.059*	0.112	*0.084*	*0.140*	0.280	*0.242*	*0.319*
car	poorest	0.163	*0.129*	*0.196*	0.138	*0.107*	*0.169*	0.216	*0.180*	*0.251*
	middle (lower)	0.297	*0.255*	*0.339*	0.274	*0.234*	*0.314*	0.345	*0.305*	*0.384*
	middle	0.337	*0.293*	*0.382*	0.338	*0.294*	*0.382*	0.419	*0.375*	*0.464*
	middle (upper)	0.389	*0.344*	*0.434*	0.442	*0.394*	*0.490*	0.533	*0.488*	*0.578*
	richest	0.549	*0.496*	*0.602*	0.590	*0.539*	*0.641*	0.638	*0.588*	*0.689*

Source: Author's calculations.

Figure 12: Average Quantity per Household of Selected Durable Goods Across Ethnic Groups, 1995 vs. 2001 vs. 2003 (means and 95% confidence intervals)

Type of durable good	Location	1995			2001			2003		
		Mean	95% confidence		Mean	95% confidence		Mean	95% confidence	
automatic washing machine	Bulgarian	0.405	0.384	0.426	0.498	0.476	0.519	0.563	0.544	0.581
	Turk	0.070	0.030	0.110	0.193	0.128	0.258	0.278	0.221	0.334
	Roma	0.024	-0.010	0.058	0.053	0.026	0.080	0.090	0.039	0.142
color TV	Bulgarian	0.778	0.755	0.802	0.934	0.911	0.957	1.064	1.042	1.086
	Turk	0.601	0.518	0.684	0.710	0.618	0.803	0.865	0.798	0.933
	Roma	0.244	0.149	0.339	0.432	0.369	0.496	0.607	0.510	0.703
personal computer	Bulgarian	0.017	0.012	0.023	0.046	0.037	0.055	0.115	0.103	0.127
	Turk	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.032
	Roma	0.000	0.000	0.000	0.004	-0.004	0.011	0.000	0.000	0.000
car	Bulgarian	0.367	0.346	0.389	0.382	0.360	0.404	0.450	0.429	0.470
	Turk	0.234	0.165	0.303	0.221	0.152	0.289	0.265	0.207	0.323
	Roma	0.061	0.008	0.114	0.083	0.048	0.118	0.074	0.027	0.121

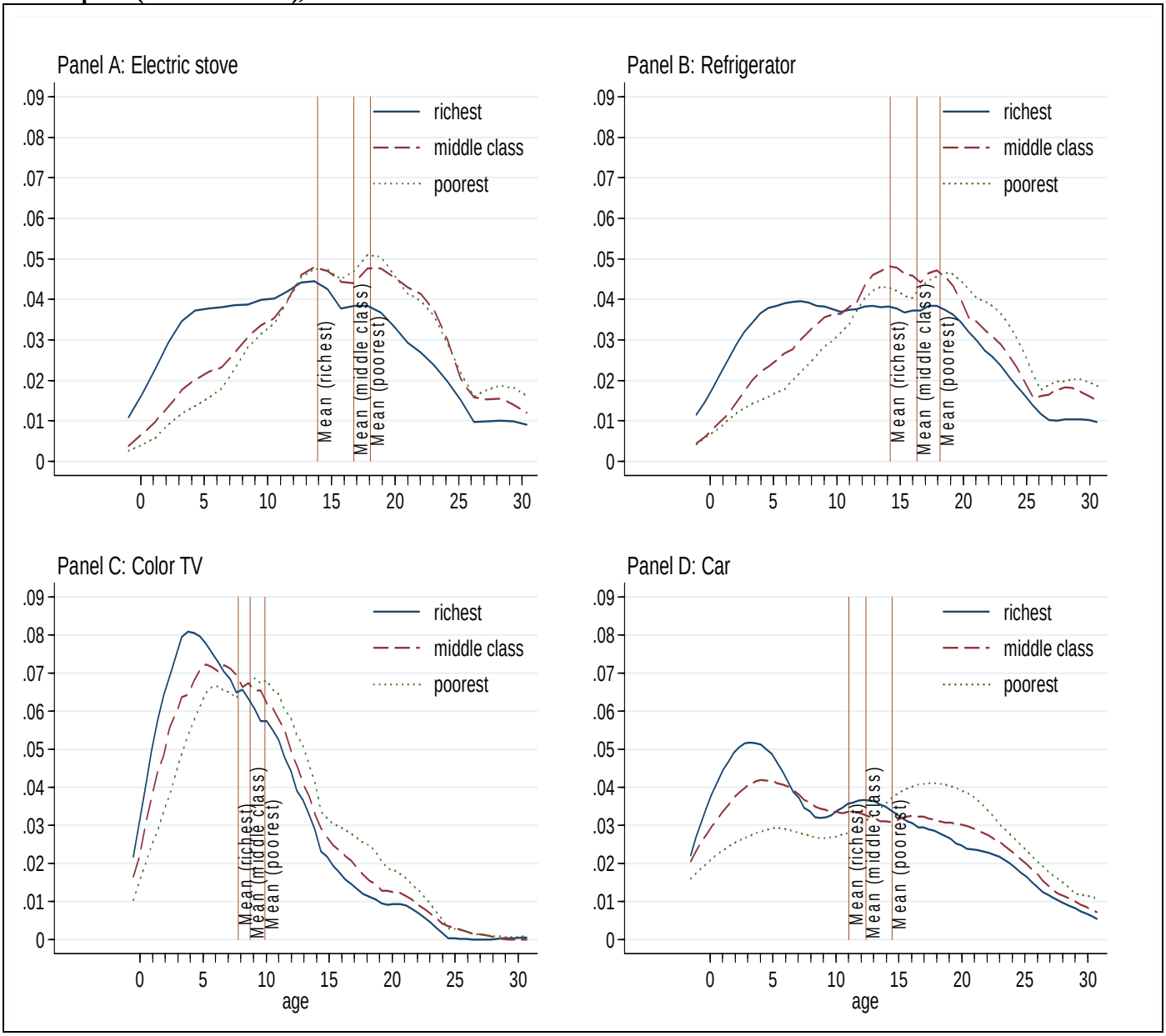
Source: Author's calculations.

Figure 13: Average Quantity per Household of Selected Durable Goods Across Locations, 1995 vs. 2001 vs. 2003 (means and 95% confidence intervals)

Type of durable good	Location	1995			2001			2003		
		Mean	95% confidence interval		Mean	95% confidence interval		Mean	95% confidence interval	
automatic washing machine	Sofia	0.556	*0.505*	*0.606*	0.613	*0.564*	*0.662*	0.694	*0.649*	*0.739*
	other urban	0.457	*0.429*	*0.485*	0.549	*0.522*	*0.576*	0.634	*0.610*	*0.659*
	rural	0.144	*0.119*	*0.168*	0.222	*0.192*	*0.251*	0.291	*0.262*	*0.321*
color TV	Sofia	0.836	*0.784*	*0.889*	0.989	*0.940*	*1.039*	1.046	*0.995*	*1.098*
	other urban	0.873	*0.842*	*0.904*	0.982	*0.952*	*1.011*	1.142	*1.113*	*1.170*
	rural	0.513	*0.475*	*0.551*	0.703	*0.664*	*0.743*	0.848	*0.809*	*0.887*
personal computer	Sofia	0.034	*0.016*	*0.052*	0.095	*0.064*	*0.125*	0.211	*0.172*	*0.250*
	other urban	0.020	*0.012*	*0.028*	0.047	*0.036*	*0.058*	0.134	*0.116*	*0.152*
	rural	0.000	*0.000*	*0.000*	0.006	*0.001*	*0.012*	0.013	*0.006*	*0.020*
car	Sofia	0.268	*0.220*	*0.315*	0.321	*0.270*	*0.373*	0.417	*0.362*	*0.471*
	other urban	0.428	*0.399*	*0.458*	0.423	*0.394*	*0.452*	0.505	*0.478*	*0.533*
	rural	0.254	*0.222*	*0.286*	0.263	*0.231*	*0.295*	0.306	*0.274*	*0.338*

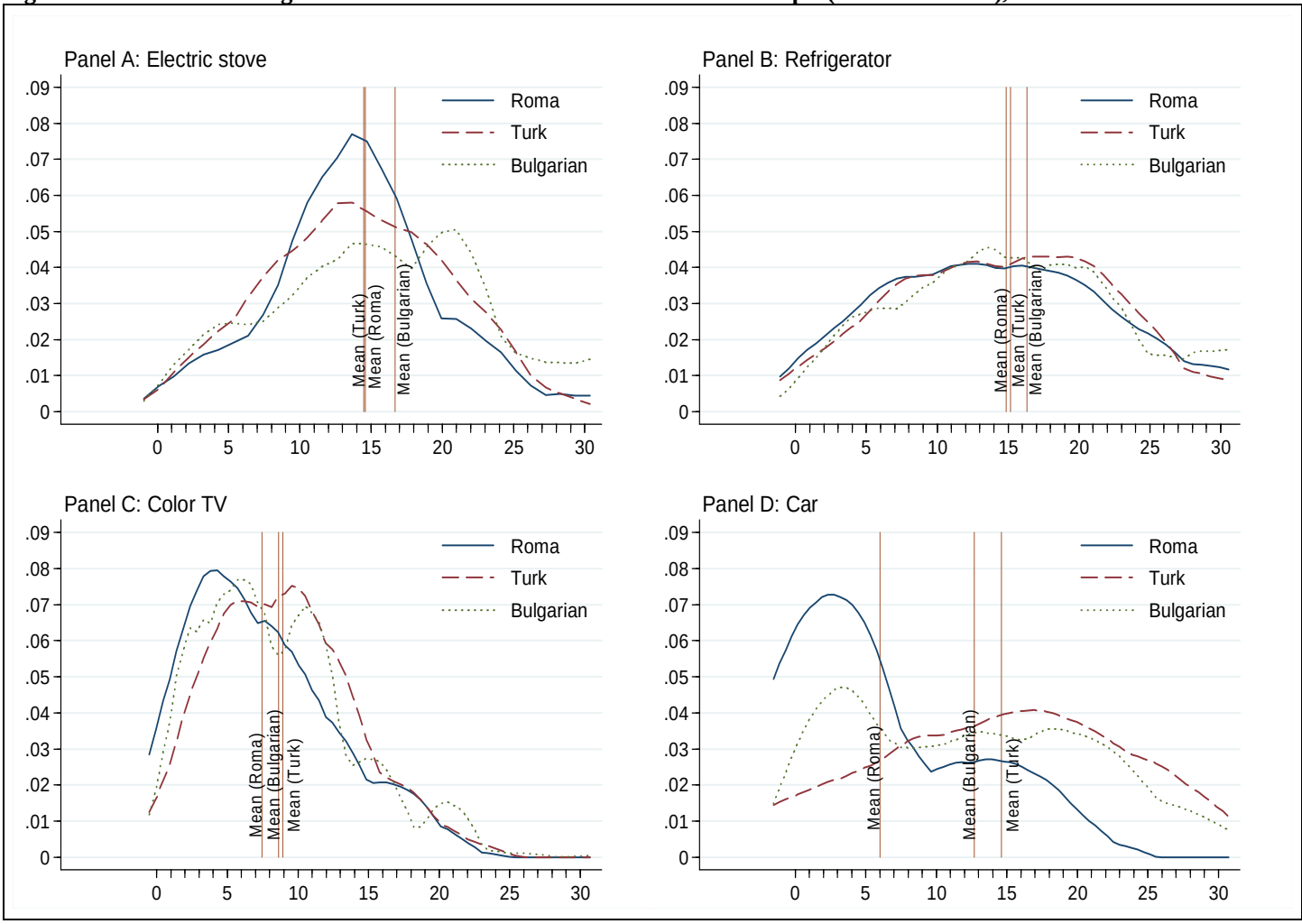
Source: Author's calculations.

Figure 14: Differences in the Age of Selected Durable Goods Across Distribution of Household per Capita Consumption (kernel densities), 2001



Source: Author's estimates.

Figure 15: Differences in Age of Selected Durable Goods Across Ethnic Groups (kernel densities), 2001



Source: Author's estimates.